IN THE UNITED STATES DISTRICT COURT
OF THE EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

ICHL, LLC d/b/a INTELLECTUAL CAPITAL HOLDINGS LIMITED Plaintiff	§	
V.	§	**No. 5:08CV65**
NEC CORPORATION OF AMERICA, ET AL. Defendants	§	

ICHL, LLC d/b/a INTELLECTUAL CAPITAL HOLDINGS LIMITED Plaintiff	§	
V.	§	**No. 5:08CV175**
BFG TECHNOLOGIES, INC., ET AL. Defendants	§	

ICHL, LLC d/b/a INTELLECTUAL CAPITAL HOLDINGS LIMITED Plaintiff	§	
V.	§	**No. 5:08CV177**
LG ELECTRONICS, INC., ET AL. Defendants	§	

MEMORANDUM OPINION AND ORDER

Before the Court are Plaintiff's Claim Construction Brief (Docket Entry Nos. 87, 67, and 92), Defendants' Responsive Claim Construction Brief (Docket Entry Nos. 90, 69, and 94), and Plaintiff's Claim Construction Reply Brief (Docket Entry Nos. 96, 73, and 99). Also before the Court are the Local Patent Rule (LPR) 4-3 Joint Claim Construction Statement (Docket Entry Nos. 86,66, and 91) and the LPR 4-5 Joint Claim Construction Chart (Docket Entry Nos. 100, 76, and

102). A claim construction hearing, in accordance with *Markman v. Westview Instruments*, 52 F.3d 967 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996), was held on February 9, 2010. After hearing the arguments of counsel and reviewing the relevant pleadings, presentation materials, other papers, and case law, the Court finds the disputed terms of the patents-in-suit should be construed as set forth herein.

I. Background

On April 11, 2008, Plaintiff ICHL, LLC d/b/a Intellectual Capital Holdings Limited ("Plaintiff") initiated a patent infringement lawsuit against NEC Corporation of America ("NEC"), Sony Electronics, Inc., Sony Computer Entertainment America, Inc., Sony Corporation of America (collectively "Sony"), and Lenovo, Inc. ("Lenovo"), alleging infringement of U.S. Patent No. 4,884,631 ("the '631 Patent"). The '631 Patent, entitled "Forced Air Heat Sink Apparatus," generally relates to a heat sink assembly used in computers, servers, game consoles, and other consumer electronic products, to aid in the cooling of semiconductors and other electronic components.

On October 6, 2008, Plaintiff initiated a patent infringement lawsuit against BFG Technologies, Inc. ("BFG"), EVGA Corporation ("EVGA"), Diamond Multimedia Systems, Inc. ("Diamond"), PNY Technologies, Inc. ("PNY"), and Eastcom, Inc. d/b/a XFX Technology USA ("Eastcom"), alleging infringement of the '631 Patent. On October 9, 2008, Plaintiff initiated a patent infringement lawsuit against LG Electronics, Inc. ("LG"), Mitsubishi Digital Electronics America, Inc. ("Mitsubishi"), Samsung Electronics America, Inc. ("Samsung"), Sim2 USA, Inc. ("Sim2"), and Toshiba America Consumer Products, LLC ("Toshiba"), alleging infringement of the '631 Patent. All three cases have been consolidated for purposes of claim construction. Plaintiff alleges Defendants infringe all claims of the '631 Patent

II. Legal Principles

A determination of patent infringement involves two steps. First, the patent claims are construed, and, second, the claims are compared to the allegedly infringing device. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1455 (Fed. Cir. 1998) (en banc). The legal principles of claim construction were reexamined by the Federal Circuit in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). The Federal Circuit in *Phillips* expressly reaffirmed the principles of claim construction as set forth in *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996), *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576 (Fed. Cir. 1996), and *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111 (Fed. Cir. 2004). Claim construction is a legal question for the courts. *Markman*, 52 F.3d at 979.

The Court, in accordance with the doctrines of claim construction that it has outlined in the past, will construe the claims of the '631 Patent below. *See Pioneer Corp. v. Samsung SKI Co., LTD.*, No. 2:07-CV-170, 2008 WL 4831319 (E.D. Tex. Mar. 10, 2008) (claim-construction order). These constructions resolve the parties' disputes over the literal scope of the claims.

III. The Patent-in-Suit: U.S. Patent No. 4,884,631

The '631 Patent entitled Forced Air Heat Sink Apparatus was filed and issued on December 5, 1989. The Abstract of the '631 Patent states:

> A high efficiency forced air heat sink assembly employs a split feed transverse flow configuration to minimize the length of the air flow path through at least two separated fin structures. Different embodiments use different fin structure material configurations including honeycomb, corrugated, and serpentine. Each such embodiment uses a thermally conductive plate having opposed exterior surfaces; one for receiving a component to be cooled and one for receiving the fin structures. The serpentine structured fin embodiment employs a plurality of fin supports extending from the plate and forming a plurality of channels for receiving the fin structures. A high thermal conductivity bondant, such as metal-filled epoxy, may be used to bond the fin structures to either the plate or the fin supports. Dip brazing and soldering may also be employed depending upon the materials selected.

The Court uses the following overview from Plaintiff's opening claim construction brief. Integrated circuits generate heat, and increasingly powerful chips generate more and more heat. Recognizing that heat buildup is a limiting factor on the ability to make smaller and more powerful chips, designers and manufacturers have consistently sought to develop (and improve upon) strategies to dissipate this heat. ('631 Patent at 1:25-27, 46-52). A principal strategy is to use a heat sink. A heat sink generally consists of metal that is connected to the heat-producing electrical component. The heat sink absorbs the heat and then allows it to dissipate into the ambient air.

To facilitate this process, heat sinks have traditionally employed two features: (1) the use of "fins" to expand the surface area of the heat sink in order to have more contact with (and, accordingly, more dissipation into) the ambient air, and (2) the use of cool air blowing across the surface of the heat sink in order to allow more heat to dissipate more quickly into the ambient air.

The inventor of the '631 Patent is Dr. Wally Rippel. At the time of the invention, in the 1980s, Dr. Rippel was working at the California Institute of Technology. His work which led to the invention was performed in connection with a project with NASA. Dr. Rippel had the idea to improve upon then-traditional heat sink designs by configuring the heat sink and its fins, relative to the air flow, so as to make more efficient use of that air flow. Dr. Rippel's ideas involve directing air flow into a gap between two or more "fin structures," such that the air flow will divide into the fin structures, shortening the distance that the air travels across the surface of the fins. This design builds on the premise that air becomes warmer (and, therefore, less able to absorb additional heat efficiently) the further it travels across a heat sink's surface. ('631 Patent at 2:59-61). In turn, shortening the air flow path leads to more efficient heat dissipation. ('631 Patent at 3:11-16). Thus, a principal advantage of Dr. Rippel's design is that:

> there is, because of the split feed configuration, a short air flow path which is

> significantly shorter than the total air flow traversal path that would otherwise be encountered if the air flow through heat sink assembly were from one side to the other as in a conventional prior art heat sink assembly.

('631 Patent at 4:60-65).

IV. Claim Construction

A. Assembly Terms

In arguing their proposed constructions for "heat sink assembly" as well as the other assembly terms ("top plate," "thermally conductive planar member," "bonded to said second surface," and "in intimate contact with said second surface)," the parties generally disagree over whether the present invention includes "extruded" or integrally-bonded heat sinks. Because the parties' arguments on this issue relate to the Court's analysis on all five assembly terms, the Court outlines the general arguments below.

Both parties agree the prior art the '631 Patent sought to improve upon was typically an "extruded" heat sink whose manufacturing process created the fins and base together as a single, integrally-bonded component. ('631 Patent at 1:38-41)(noting that prevailing prior art utilized "conventional extruded structures"). According to Plaintiff, just like other heat sinks, extruded heat sinks comprise an assemblage of elements – at least a base and fins – but these elements happen to be integrally bonded during the extrusion process. Plaintiff points out that the specification refers to the prior art as a "conventional prior art heat sink assembly" without differentiating between extruded and non-extruded varieties, indicating that integrally bonded heat sinks are still regarded as "heat sink assemblies." ('631 Patent at 4:65).

On the other hand, Defendants highlight the specification's discussion of how the preferred embodiments are generally superior to the use of extruded materials. ('631 Patent at 5:13-25). The specification says that the ordinarily preferable "dimensions are generally far too small to make

extrusion of the fin structures a viable fabrication technique." Dr. Rippel's July 17, 1985 disclosure also criticized extruded structures, stating "[t]hus far . . . fabrication costs have precluded general use of such and conventional extruded structures have prevailed where fin thickness, spacing and orientation are all constrained to non-optimal values." (Rippel 000057-58, Defendants' Br., Ex. D). Dr. Rippel continues as follows:

> Optimal fin thickness and spacing are relatively small; fin thickness and spacings range 0.003 to 0.008 inch and 0.020 to 0.050 inch respectively. Not only are these dimensions beyond the limits of 'extrudability,' but without reinforcement, the resulting structure would lack mechanical stability.

Id. Defendants argue the patentee is telling one of ordinary skill in the art that he cannot achieve this invention using an extruded device because he could not achieve optimal fin thickness and spacing.

Defendants highlight the specification's discussion of how the preferred embodiments are generally superior to the use of extruded materials. ('631 Patent at 5:13-25). However, as urged by Plaintiff, this description of why the preferred embodiments are "preferred" does not purport to exclude non-preferred embodiments from the scope of the claims. The specification only says that the ordinarily preferable "dimensions are *generally* far too small to make extrusion of the fin structures a viable fabrication technique." According to Plaintiff, the preferred embodiments are "generally" better suited to meet ordinary demands; this does not mandate that extruded materials can never be used to implement Dr. Rippel's novel configuration.

Plaintiff also relies on the specification, asserting it recognizes that the novel configuration can be applied in different contexts, involving different "dimensions" and making use of different "materials." The specification specifically advises that there will be various modifications and additions which may be made to the invention. "By way of example, alternative materials, shapes

and dimensions may be utilized for both the fin structure and the overall configuration of the assembly while still exploiting the essential feature of the invention, namely, the split feed transverse flow configuration. Accordingly, all such modifications and additions are deemed to be within the scope of the invention which is to be limited only by the claims appended hereto." ('631 Patent at 7:5-13).

In addition, according to Plaintiff, the specification specifically discusses both integral and non-integral connections between the fins and the heat sink base. In the Abstract, soldering and dip brazing, both of which produce integral connections, are identified as appropriate means by which the relevant structure can be created. ('631 Patent at Abstract). *See also* U.S. Patent No. 6,284,985, "Ceramic Circuit Board With A Metal Plate Projected To Prevent Solder-Flow," Abstract (Sept. 4, 2001)(discussing invention of a circuit board involving a "semiconductor element integrally bonded to a surface of the metal circuit plates through a solder layer"). The specification recognizes dip brazing to be an acceptable means of creating the patented structure. According to Plaintiff, dip brazing produces an "integrated" structure, i.e., with bonds at the molecular level. Plaintiff asserts this shows that the patent covers products even if, in the final snapshot, the structural relationship between fins and heat sink base involves an integral bond. In contrast, Defendants describe dip brazing as another two-step process which begins with two distinct parts that are subsequently "put together." (Defendants' Response at 24).

Given the specification's recognition that the novel configuration can be applied in different contexts, involving different "dimensions" and making use of different "materials," Plaintiff asserts all such embodiments are covered by the claims as long as the heat sink employs the "essential" air flow configuration called out by the patent. ('631 Patent at 7:6-11). Plaintiff asserts what is "essential" is the physical configuration of the heat sink, promoting a split-feed air flow and that

configuration's ability to enhance the heat sink's efficiency; what is not essential is the manufacturing method used to produce the specified configuration.

With these general arguments in mind, the Court now considers the parties' specific arguments as to the five assembly terms.

1. "Heat sink assembly"

a. Parties' Positions

The parties propose the following constructions for "heat sink assembly," which is present in the preamble to claims 2 and 3 of the '631 Patent. According to Plaintiff, this term describes a category of products to which this invention applies, and the patentee, by using the term "heat sink assembly" in the preamble, did not intend to impose a limitation that separate pieces form the heat sink. Defendants assert the heat sink's base cannot be "integrally" connected to the fins, and the patentee intended for the heat sink to be assembled using multiple parts.

Plaintiff	Defendants
Heat sink device	A heat sink that is put together using two or more parts.

b. Court's Construction

In the preamble to each of the claims, it is stated that the invention relates to a "heat sink assembly." Plaintiff asserts this term should be understood to mean simply an object that dissipates heat generated by an electrical component. Plaintiff further asserts the context of the term's appearance in the preamble, not in the body of the claims, as well as the nature of the '631 Patent as an apparatus patent require that Defendants' construction of this term be rejected. According to Plaintiff, nothing in the term "heat sink assembly" requires any particular means of manufacture. In addition, Plaintiff contends the specification reveals that the term "assembly" was not intended

to exclude any particular means of manufacturing heat sinks or to differentiate between single-component and multiple-component designs.

Because this term appears in the preamble to claims 2 and 3, the main question before the Court is whether "heat sink assembly" is a separate limitation of the claimed invention. In general, a preamble is construed as a limitation "if it recites essential structure or steps, or if it is "necessary to give life, meaning, and vitality" to the claim. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999). A preamble is not limiting "where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention." *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997). The Federal Circuit Court of Appeals has identified "several guideposts to aid in determining whether a preamble should be given limiting weight." *Symantec Corp. v. Computer Associates Int'l,* 522 F.3d 1279, 1288 (Fed. Cir. 2008). For example, "clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention." *Id.*

Absent clear reliance on the preamble in the prosecution history, or in situations where it is necessary to provide antecedent basis for the body of the claim, the preamble "generally is not limiting." *Id., quoting Catalina Mktg., Int'l v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002). Generally, "the purpose of a claim preamble is to give context for what is being described in the body of the claim; if it is reasonably susceptible to being construed to be merely duplicative of the limitations in the body of the claim . . ., we do not construe it to be a separate limitation." *Symantec*, 522 F.3d at 1288-89. "Whether to treat a preamble as a limitation is a determination resolved only on review of the entire[ ] . . . patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim." *Poly-America, L.P. v. GSE Lining*

Technology, Inc., 383 F.3d 1303, 1309 (Fed. Cir. 2004).

In the preamble, "heat sink assembly" does not purport to delineate a structural limitation of the invention. The preamble does not recite essential structure because the claim elements are directed toward the claimed invention's structure. Stated differently, considering "top plate," "first surface," "second surface," "fin structures," "cover plate," etc. contained in the claims, the structure is sufficiently disclosed in the claims without use of the preamble. Moreover, the body of the claims recite the complete invention. *See Schumer v. Lab. Computer Sys., Inc.*, 308 F.3d 1304, 1310 (Fed. Cir. 2002) (where the body of the claim sets out the complete invention, the preamble is not ordinarily treated as limiting the scope of the claim). No one has argued there was a clear reliance on the preamble in the prosecution history. Nor is the preamble necessary to provide antecedent basis for the body of the claims.

"In considering whether a preamble limits a claim, the preamble is analyzed to ascertain whether it states a necessary and defining aspect of the invention, or is simply an introduction to the general field of the claim." *Computer Docking Station Corp. v. Dell, Inc*., 519 F.3d 1366, 1375 (Fed. Cir. 2008), *quoting On Demand Mach. Corp. v. Ingram Indus.*, 442 F.3d 1331, 1343 (Fed. Cir. 2006). While the preamble may arguably recite a defining aspect of the invention, a heat sink, it does not do so with respect to the structure, i.e. one or two pieces. Rather, the preamble is limited to stating the purpose of the invention. According to Plaintiff, the term places the invention in context by referring to the type of product to which the invention applies.[1] Under these

[1] Plaintiff asserts the specification's references to the "heat sink assembly" are to focus attention on the whole, instead of any particular part of the heat sink. ('631 Patent at 4:18-19, 49, 64; 5:1, 4, 48, 63; 6:1, 67-68; and 7:9). According to Plaintiff, this distinction between the part and the whole has nothing to do with whether the heat sink's various elements share integral or mechanical connections. Rather, the "assembly" refers to an assembly of "features" or "elements," not specifically as an assembly of independent, physical parts.

circumstances, the language in the preamble does not impose a separate claim limitation.

Defendants argue that their construction of "assembly" is required in order to have this word impose any meaningful limitations on the scope of the claims. However, Defendants ignore the fact that "assembly" does not appear in the body of the claims, but only in the preamble, and that such preamble language, in this case, does not limit the scope of the claims. Given that the preamble is not limiting, the Court finds no construction is necessary for the term "heat sink assembly."

2. "top plate"

a. Parties' Positions

The parties propose the following constructions for "top plate," which is present in claim 2 of the '631 Patent, which generally describes Dr. Rippel's invention using a "cover plate." The electrical component to be cooled sits on one side of the "top plate," and this side serves as the "first surface" as described in both claims 2 and 3. The heat sink's "fins" protrude from the other, "second surface." The primary dispute between the parties is whether the claim term "top plate" should exclude "integral" connections.

Plaintiff	Defendants
A generally planar member to which fin structures may be either integrally or non-integrally connected	A flat member that is separate from the fin structures.

b. Court's Construction

Plaintiff suggests that "generally planar" could include the protrusions from the top plate. However, throughout the specification, the top plate is shown as flat. Figures 1 - 3 and 6 - 8 depict the top plate and planar member. In the figures, the plate is flat. Figure 6 is a picture of the fin

supports. They support the fin structures between them and are not the top plate; they are labeled differently. The top plate in Figure 6 is flat. Figures 7 and 8 also depict flat top plates. Plaintiff's generally planar language is not supported by the intrinsic evidence. The Court will utilize the first part of Defendants' proposed construction, "a flat member." The Court now considers the parties' primary dispute, whether the claim term should exclude "integral" connections.

While Plaintiff asserts its proposed construction takes no position on whether or not protrusions are integrally connected to the flat member, Defendants assert the term is inconsistent with the notion that the fin structures could be integrally bound. According to Plaintiff, Defendants focus on a mechanical bonding method referenced in the specification (i.e., the use of an epoxy) and the claim language does not compel any such limitation. Plaintiff asserts there is nothing inherent in the concept of a "plate" that would prevent these connections from being "integral" connections. Plaintiff further asserts the Abstract specifically identifies soldering and dip brazing, both of which produce integral connections, as appropriate means for connecting the plate element with the fins. ('613 patent at Abstract); *see also* U.S. Patent No. 6,284,985 Abstract (describing circuit plates as "plates" even though a semiconductor element has been "integrally bonded" into plates).

Plaintiff further asserts the preferred embodiment in the '631 Patent specifically utilizes "a plurality of *fin supports which extend integrally from* and perpendicular to *the top plate*." ('631 Patent at 5:51-53)(emphasis added). According to Plaintiff, Defendants' narrow reading of "plate" cannot be reconciled with the structure of this preferred embodiment which makes clear that the existence of "integral" protrusions will not destroy the top plate's status as a "plate." *See NeoMagic Corp. v. Trident Microsystems, Inc.*, 287 F.3d 1062, 1074 (Fed. Cir. 2002) (claim constructions that exclude the preferred embodiment are strongly disfavored).

Defendants' proposed construction does not import process limitations regarding the manufacture of the claimed structures as suggested by Plaintiff.[2] Defendants' proposed construction is directed to describing the relationship between the specific structural components of the invention. *See Vanguard Prods. Corp. v. Parker Hannifin Corp.*, 234 F.3d 1370, 1372 (Fed. Cir. 2000) (affirming a construction that "describes the relationship" between two components). More importantly, Defendants' proposed construction does not import any limitations, but rather stems from the plain language of the claims. In claim 2, the heat sink assembly comprises a "top plate" having first and second surfaces, the second surface of which is for "receiving" fin structures that are "bonded to" the second surface. Similarly, claim 3 recites a heat sink assembly that comprises at least two fin structures "in intimate contact with" the second surface of a thermally conductive planar member.

The heat sink has a top plate having a first surface for receiving said component and a second surface for receiving fin structures. If the inventor had intended to cover extruded heat sinks, there would have been no need for a second surface for receiving fin structures as the second surface's purpose is for receiving, gluing, bonding, or putting the separate fin structures on top of it.

The Court agrees with Defendants that the invention does not cover extruded heat sinks. Rather, the top plate should be construed as a flat member that is separate from, rather than integrally connected, to the fin structures. Therefore, the Court construes the term "top plate" to mean "a flat member that is separate from the fin structures."

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[2] Plaintiff asserts the '631 Patent is an apparatus patent, not a process patent. According to Plaintiff, it would be a mistake to look past the physical configuration of the apparatus' elements by focusing instead on the manufacturing methods used to achieve that configuration.

3. "Thermally conductive planar member"

a. Parties' Positions

This phrase occurs in claim 3 of the '631 Patent. Again, Defendants contend the heat sink assembly's fin structures cannot be integrally bound to the thermally conductive planar member.

Plaintiff	Defendants
A generally planar member to which fin structures may be either integrally or non-integrally connected	A flat, thermally conductive member that is separate from the fin structures

b. Court's Construction

Plaintiff asserts there is nothing in the concept of a "planar member" that would prevent it from being integrally connected to the "fin" members, and any proposed construction of this term which tries to impose manufacturing process limitations should be rejected. Defendants assert the patent describes a thermally conductive planar member having a first surface for receiving a component to be cooled and having a second surface to put the fin structures on.

As noted above, if the pieces were extruded or integrally connected, there would be no need for a second surface as it would all be one surface. Defendants persuasively point out that at least two fin structures are in intimate contact with the second surface, requiring that the top plate or the planar member be separate and distinct from the fin structures. In light of the foregoing, the Court construes "thermally conductive planar member" to mean "a flat, thermally conductive member that is separate from the fin structures."

4. "Bonded to said second surface"

a. Parties' Positions

"Bonded to said second surface" is found only in the text of claim 2. Plaintiff asserts this term does not require any construction. Alternatively, Plaintiff asserts the term should be construed as indicating only that the heat sink base must be thermally connected to the fin structures.

Plaintiff	Defendants
Thermally connected to the second surface	Affixed to the second surface using a thermally-conductive bondant.

b. Court's Construction

The specification discusses using an epoxy adhesive as one way to bind the fin structures to the heat sink base. ('631 Patent at Abstract; 4:37-39). Plaintiff argues this embodiment cannot exclude other means to bind the fin structures, including means that rely on integral bonds. For example, according to Plaintiff, the specification also discusses soldering and dip brazing as viable means of bonding, even though these mechanisms create an integral bond. Plaintiff also relies on the specification, which notes that the heat sink's elements may be fashioned out of "alternative materials" ('631 Patent at 7:7), and the Abstract, which states that, in addition to a metal-filled epoxy, dip brazing and soldering "may also be employed depending on the materials selected." Finally, Plaintiff asserts Defendants' proposed construction that the bonding must be non-integral is inconsistent with the preferred embodiment, which contemplates the fin structures being "integrally" connected to the top plate. ('631 Patent at 5:51-53).

According to Defendants, "bonded to said second surface" means the fin structures are affixed to the second surface using a bondant, whether that bondant be an epoxy, an alloy in dip brazing, or

solder. Defendants assert the term does not mean extruded; rather, bonding requires the attachment of two separate parts. The Court agrees the claims in the specification confirm that a bonded substance joins the fin structures to the top plate.

There is further support for this in claim 2 where a plurality of fin structures are each bonded to said second surface. The claim further provides a top plate having a second surface for receiving fin structures. The fin structures are each bonded to said second surface. If the inventor were talking about an extruded heat sink, there would be no need for a second surface for receiving fin structures, and there would not be a plurality of fin structures bonded to the second surface. There are two separate pieces, not one piece.

Looking at the Abstract, a person of ordinary skill in the art would understand bonding to require affixing two separate pieces together. A high thermal conductivity bondant, such as metal-filled epoxy, may be used to bond the fin structures to either the plate or the fin supports. Dip brazing and soldering may also be employed depending upon the material selected. The Court agrees with Defendants' proposed construction and construes "bonded to said second surface" to mean "affixed to the second surface using a thermally-conductive bondant."

5. "In intimate contact with said second surface"

a. Parties' Positions

The term is found in claim 3 of the '631 Patent. Plaintiff proposes the same construction for "bonded to said second surface" and "in intimate contact with said second surface," asserting both terms mean "thermally connected to the second surface." Defendants assert "in intimate contact with said second surface" means "in contact with, but not integral with, the second surface." Defendants assert an alternate construction is "in contact with but distinct from the second surface."

Plaintiff	Defendants
Thermally connected to the second surface	In contact with, but not integral with, the second surface.

b. Court's Construction

The parties dispute what the word integral means. The parties agree that an epoxy or glue is non-integral. Plaintiff asserts extrusion and dip brazing are integral bonding techniques. Defendants assert dip brazing, if one wants to call it integral, still has glue or some alloy between it allowing a person to attach two separate pieces together. Defendants argue extrusion is completely different; rather than starting with two separate pieces and putting them together, extrusion starts with one piece of metal.

The claim language and the specification describe using a bondant and bonding techniques such as dip brazing, soldering, and metal-filled epoxy. Plaintiff's proposed construction proposes a thermal connection, or a connection that transfers thermal heat. Defendants maintain this proposal is too broad because it would cover situations where there are two plates that are not touching or bonded but that are thermally connected. According to Defendants, two plates could be thermally connected if one put between them a gas which could transfer heat.

The Court agrees that Plaintiff's construction is too broad. It reads out the limitation of intimate contact. In claim 3, at least two fin structures are in intimate contact with the second surface. Contact requires the touching of two or more distinct parts, and contact between the planar member and the fin supports requires touching of these distinct parts. The Abstract also supports Defendants' alternate proposed construction, each such embodiment uses a thermally conductive plate having

exposed exterior surfaces, one for receiving the component to be cooled and one for receiving the fin structures. A solid object, such as an extruded heat sink, cannot be in contact with itself.

In light of the foregoing, the Court construes "in intimate contact with said second surface" to mean "in contact with, but distinct from the second surface."

B. The Split Feed Transverse Flow Configuration – Air Flow Terms

The first air flow term, "whereby an air flow into said inlet between said two fin structures is divided, with a respective portion of said air flow being directed through each of said two fin structures," is located in claim 2 of the '631 Patent. The second air flow term, "a gap . . . configured for receiving air flowing toward said second surface, dividing said air into two portions and directing each such portion through a separate fin structure," is located in claim 3 of the'631 patent.

Plaintiff acknowledges a "split feed transverse flow" is an essential feature of the '631 Patent. However, the split feed transverse flow is not expressly included in any of the claims, and Plaintiff asserts Defendants attempt to import the split feed transverse flow feature into their proposed constructions. Plaintiff asserts the patent says implicitly there has to be some air flow, but it does not say where the air source is located nor does it say anything about the air source, how fast it is going to flow, how concentrated, or how tight it must flow. Thus, according to Plaintiff, the '631 Patent and the split feed transverse flow must be interpreted broadly enough to account for multiple air flows.

According to Defendants, the "novel" and "essential" feature of the disclosed invention, according to the '631 specification, is the split feed transverse flow configuration. The split feed transverse flow is described in the specification as where air flow enters the structure through a slot that has been divided into two flow paths, one flowing through each of two separate fin structures. The reason is to minimize air flow length, making the distance fresh cool air has to flow across the

fins as short as possible. Defendants assert "the specification uses language of requirement, rather than preference," and thus "the specification describes an essential step or element of the claim, rather than merely a preferred embodiment." With the parties' general arguments in mind, the Court considers the two air flow terms below.

1. "Whereby an air flow into said inlet between said two fin structures is divided, with a respective portion of said air flow being directed through each of said two fin structures."

a. Parties' Positions

The parties propose the following constructions for this term which is present in claim 2 of the '631 Patent. The main disputes are whether this term includes an "exclusive entry" requirement; a "perpendicular entry" requirement; and an "exclusive exit" requirement as urged by Defendants.

Plaintiff	Defendants
Whereby an air flow into said inlet is divided, such that respective portions of the air flow are directed through separate fin structures	Where the inlet receives forced air directed at and flowing perpendicular to the second surface, where the forced air is split and all the air flows through the passages of the fin structures, along paths parallel to the second surface.

b. Court's Construction

Defendants assert the claims of the '631 Patent must be construed to require "the 'essential' [split feed transverse] air flow configuration called out by the patent." (Plaintiff's brief at 7); *see also MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1330 (Fed. Cir. 2007) (construing claims to "ensure that they" require an "essential feature" described in the specification and the prosecution history). The '631 specification provides a basic description of the split feed transverse flow configuration as follows:

> [T]he novel structure of the present invention utilizes a split feed transverse flow heat sink configuration where air flow enters the structure through a slot and is then divided into two flow paths, one flowing through each of two separate fin structures.

('631 Patent at 2:23-28). According to Defendants, the claims of the '631 Patent must be construed to require a structure that provides for three essential elements of air flow:

(1) Air enters the heat sink through a slot.

(2) All of the air is then divided (i.e., split) into two flow paths.

(3) Each flow path flows transversely through one of two separate fin structures.

Defendants further assert Figure 1 of the '631 Patent, which the specification refers to twice as the "heat sink assembly of the present invention" (4:12-13; 4:40), provides a helpful illustration of a basic heat sink assembly having these three elements of the split feed transverse flow configuration.

Defendants contend the language of the specification teaches that the '631 heat sink has a single air inlet. (*See, e.g.,* 2:4-8 (Statement of the Invention) ("[T]he air flow path between *inlet* and outlet should be minimized."); 6:58-60 ("The split feed transverse flow configuration reduces the thermal path between *inlet* and outlet . . . .") (emphasis added)). Therefore, Defendants' proposed construction requires that the inlet be the exclusive entry point of forced air into the heat sink, not simply one among many entry points.

Defendants' proposed construction also requires the configuration to split the forced air after the air enters the inlet and that all of the split air flows through the fin structures. Relying on claim 2, which states that the respective portions of air flow divided by the slot are "directed through the fin structures," Defendants argue the split feed transverse flow configuration requires that each of the two flow paths flows through a fin structure. ('631 Patent at 2:23-29)("[T]he novel structure of the present invention utilizes a split feed transverse flow heat sink configuration where air flow enters the structure through a slot and is then divided into two flow paths, one flowing through each of two

separate fin structures."); ('631 Patent at 3:29-32)(the '631 invention "utilizes a novel split feed transverse flow configuration where the structure automatically divides the air flow *with half flowing through each of two separated fin structures*" (i.e., with *all* air flowing collectively through both of the two fin structures)) (emphasis added).

While both sides agree that the '631 Patent calls for a novel, "split feed transverse flow" configuration, Defendants seek to incorporate several additional details that are not essential elements of the configuration. Specifically, they assert that a split feed transverse flow configuration not only permits, but actually requires that air flow must enter the fin structures exclusively from the "gap" and that all air flow which enters the gap must then flow exclusively into the fin structures. These additional elements of air flow are not essential elements of the "split feed transverse flow" configuration as urged by Defendants.

Neither claim imposes any requirement to employ any more specific configuration of the gap or the air flow, including any configuration described in the preferred embodiments. ('631 Patent at 7:6-11). Nor is there any requirement that the fin structures must capture the entirety of the air flow. ('631 Patent, Fig. 1; 2:3-4, and 3:10-16). Although the split feed transverse flow configuration calls for air to flow into a gap created between fin structures and then to be split before respective portions flow transversely through the fin structures, the Court finds persuasive Plaintiff's argument that

Defendants' exacting standard is inconsistent with basic principles of air flow physics and, as a result, with how persons skilled in the relevant arts would understand the claim language. Importantly, the '631 Patent never purports to define the "air source." Thus, any definition of split feed transverse flow must be flexible enough to deal with different "air source" configurations. Claim 2, unlike claim 3, calls for a cover plate that would at least partially shield the fin structures from below. An accurate depiction of what is "essential" to a split feed transverse flow configuration

must be consistent with both claims, not just claim 2.

There is no requirement that air must enter the fin structures only through the gap. Rather, the only requirement is that some air must enter the gap. Claim 2 says that there must be a path created between two fin structures and then describes what happens to air which enters that path. Claim 2 does not say that all air generated by the air source must find its way into the path created between the fin structures, nor does it purport to describe what happens to such stray air. Claim 3 likewise says only that the gap must be "configured for receiving air," not "all air."

As urged by Plaintiff, Defendants' assertion that all of the air which enters the gap between the fin structures must then proceed through the fin structures is also inconsistent with principles of air flow. The claim language avoids saying that all air will flow through the fin structures. Claim 2 only requires that a "respective portion" of "an air flow" should flow through each fin structure.[3] Claim 3 similarly says that "air" flowing towards the second surface (not "all of the air" or even "the air") will be divided into two portions, and the "portions" will be directed to the two separate fin structures. This phrasing allows for the possibility that some parts of the air flow will not be effectively captured, a point which is consistent with how persons skilled in the relevant arts would view the claim language. (Rippel Dec. ¶ 6).

Given the fluid and dynamic nature of air flow, one skilled in the relevant art would not necessarily assume that all air which enters the gap would inevitably flow exclusively through the fin structures. Even considering Fig. 1, there is nothing to prevent some air from "spilling out" over the walls. Embodiments which lack Fig. 1's shielding would expect even more "stray" air. Figs. 6-8

[3] Defendants claim that because no other destination is specified, it follows that all air must go through the fin structures. However, Defendants give no reason why the claims would have been expected to specify where any "stray" air would have gone.

provide another embodiment in which the "ends" of the gap are not sealed by a side wall as in Fig. 1. Rather, the "walls" are cut in the shape of a "V," as reflected in Fig. 8. Plaintiff asserts this embodiment would permit the sort of "spill out" that should not be possible if Defendants' interpretation of this term were adopted by the Court.

Finally, the Court agrees with Plaintiff that there is no requirement that air must flow into the gap at a strictly "perpendicular" angle. There is no reason why, for instance, an air source cannot direct a "cone" of air towards the top plate, the vast bulk of which would follow an "angled" path. (Rippel Dec. ¶ 7).

In light of the foregoing, the Court construes "whereby an air flow into said inlet between said two fin structures is divided, with a respective portion of said air flow being directed through each of said two fin structures" to mean "whereby an air flow into said inlet is divided, such that respective portions of the air flow are directed through separate fin structures."

2. "A gap . . . configured for receiving air flowing toward said second surface, dividing said air into two portions and directing each such portion through a separate fin structure."

a. Parties' Positions

The parties propose the following constructions for this term which is present in claim 3 of the '631 Patent. The language of claim 3 states that the gap is configured for (1) "receiving air," (2) "dividing said air into two portions," and (3) "directing each [divided] portion through a separate fin structure." Again, Defendants assert there is an exclusive entry requirement by urging the gap is designed to be "the" air intake. Defendants also assert there is an exclusive exit. Plaintiff asserts Defendants argue in terms of individual air molecules, not collective air flows. According to Plaintiff, there is no requirement that the air must be "directed" at the gap.

Plaintiff	Defendants
A gap designed to receive air flowing to the second surface, to split the air flow, and to direct portions thereof through separate fin structures	A gap designed to be the air intake and arranged to receive forced air directed at and flowing perpendicular to the second surface, to split the forced air, and to direct all of the forced air through the passages of the fin structures, along paths parallel to the second surface

b. Court's Construction

With respect to the "exclusive entry" and "exclusive exit" requirements, this term does not require the all-or-nothing exclusivity that Defendants propose. Nor is there any requirement that air must flow into the gap at a strictly "perpendicular" angle. As noted above, there is no reason why, for instance, an air source cannot direct a "cone" of air towards the top plate, the vast bulk of which would follow an "angled" path. (Rippel Dec. ¶ 7). Thus, the Court declines to adopt Defendants' proposed construction for this term.

Plaintiff's proposed construction merely restates what is clear from the language of the term itself. Therefore, the Court finds no construction is necessary, and the term shall be given its plain and ordinary meaning.

C. The Split Feed Transverse Flow Configuration – Structural Terms

1. "Cover plate partially enclosing said fin structures"

a. Parties' Positions

The parties propose the following constructions for "cover plate partially enclosing said fin structures," which is present in claim 2 of the '631 Patent. Here, the dispute is whether "side walls" are required as urged by Defendants.

Plaintiff	Defendants
A generally planar member positioned generally below the fin structures (relative to the top plate) which partially encloses the fin structures	A flat member positioned on top of the fin structures having opposed side walls and a slot for directing forced air flow only into the air inlet path between said fin structures

b. Court's Construction

Again, the claim language does not support Defendants' exclusive entry argument. While the cover plate may block some of the air, there is no guarantee that the cover plate will actually prevent air from entering from any direction other than through the gaps. As urged by Plaintiff, the opening is a hole which allows air through the cover plate.

Regarding Defendants' proposed "side walls," this proposal is inconsistent with the word "plate." Notwithstanding the use of the term "plate," Defendants assert the cover plate must be "U"-shaped with side walls extending up from the base. The requirement is also inconsistent with the non-specific phrase "partially enclosing." The fact that the cover plate "partially encloses" the fin structures does not mean that side walls are mandatory. It is sufficient if the cover plate "partially encloses" the fins by sitting below them to minimize stray air escaping out the bottom (just as the "top plate" keeps air from escaping out the top). The modifier "partially" demonstrates that the claim does not require any particular extent of enclosure and not the tight seal that Defendants claim to be "essential."

Finally, Defendants suggest that the opening in the cover plate must be a "slot." To the extent Defendants assert that this term connotes a particular shape, the claim language would not support Defendants' assertion nor would the "cautionary language" of the specification which notes that the "shapes" and "dimensions" used in the described embodiments are non-essential. ('631 Patent at 7:

7).

In light of the foregoing, the Court construes "cover plate partially enclosing said fin structures" to mean "a flat member positioned to partially enclose the fin structures."

2. "Fin structure"

a. Parties' Positions

The parties propose the following constructions for "fin structure" which is present in claims 2 and 3 of the '631 Patent. Here, the primary dispute is whether the claim term should include a sheet material requirement and whether there is a "vertical stacking" requirement as urged by Defendants.

Plaintiff	Defendants
An arranged grouping of fins	A structure formed from sheet material and defining plural, vertically stacked air passages extending parallel to the second surface

b. Court's Construction

Plaintiff asserts a "fin structure" contemplates an arranged grouping of fins. According to Plaintiff, "fins" and "fin structures" refer to the technology used in heat sinks in which metal protusions extend from the surface of the heat sink in order to increase its surface area, thereby facilitating greater heat dissipation. ('631 Patent at 1:20-52).

Defendants propose that there must be "vertically stacked air passages extending" from the surface of the heat sink, "parallel" to the surface. Defendants' reference to a fin structure which incorporates "vertically stacked air passages" stems from a particular embodiment of the invention described in the specification. The specification discusses an embodiment involving a "serpentine"-style fin structure. ('631 Patent at 6:50-58). The "primary structure" of this particular fin style

employs "a series of integral vertically extending fin supports," resulting in vertically stacked air passages. *Id.*

However, this feature of this particular embodiment is not described as a necessary feature of any claim. ('631 Patent at 6:7) (discussing this embodiment as merely "one particular version of the third embodiment of the invention"). The specification acknowledges that the vertically-extended "primary structure" of this serpentine-style embodiment is not a feature of the other embodiments. ('631 Patent at 5:43-46) ("[A] third embodiment of the invention, which is disclosed in FIGS. 6-9, differs from the first two embodiments not only in fin structure but also in the primary structure which supports the fin material."). While the specification recognizes that the invention permits vertical stacking, ('631 Patent at 2:62-64), Defendants' proposal would require vertical stacking. Not only does the specification undercut Defendants' proposal that vertical stacking be construed as a general limitation on the claim language, but the claims themselves also fail to reference"vertically stacked air passages."

Defendants argue that "optimal" fin spacing and length are requirements of the '631 Patent. (Defendants' Response at 11). According to Defendants, the patent discloses three configurations of fin structures— honeycomb, corrugated and serpentine—that achieve the patent's stated objectives. Defendants assert each of these configurations includes vertically stacked air passages that extend parallel to the second surface. Although acknowledging the patent is not limited to the three embodiments, Defendants assert the vertical stacking permits the optimality required of the *essential* transverse flow, minimizing the air flow path while increasing the air flow cross section. Thus, Defendants argue the patent is limited to structures that include vertically stacked passages because only those structures are capable of providing the surface area needed to dissipate heat over such short fin lengths as contemplated in the '631 Patent. However, Defendants' argument ignores the

specification's references to how the invention does not guarantee optimality, but merely seeks to approach it more closely. ('631 Patent at 1:55 - 2:23 & 3:14-16).

Although the specification discusses vertical stacking as an attractive option, nowhere is vertical stacking described as essential. The Court is also not convinced the structures must be formed from sheet material. Rather than utilize Plaintiff's proposed construction, "an arranged grouping of fins," the Court construes the term "fin structure" to mean "an arrangement of fins and air passages."

3. "At least two of said fin structures" (claim 2)/ "at least two fin structures" (claim 3)

a. Parties' Positions

The parties agree "at least of two of said fin structures" and "at least two fin structures" should be construed as "at least two separate fin structures." Accordingly, the Court construes these two terms to mean "at least two separate fin structures."

D. Air Flow Path Terms

1. "Being in Relative spaced relation"

a. Parties' Positions

The parties propose the following constructions for "being in relative spaced relation" which is present in claim 2 of the '631 Patent. Both parties agree the fin structures must be separated or positioned apart and that the air inlet path must be an unoccupied space. The parties' disputes are (1) whether the fin structures must be positioned apart in a paralleled relationship, and (2) whether the unoccupied space extends from the second surface.

Plaintiff	Defendants
Separated from each other	Positioned apart from and parallel to each other, such that an unoccupied space extending from

	the second surface is formed between the fin structures

b. Court's Construction

Plaintiff contends this term should be given its commonly understood meaning, and no construction is necessary. Alternatively, if some construction is required, Plaintiff asserts the term describes an orientation whereby one item is positioned apart from another, forming a gap in between and that there is no requirement that the spaced relationship be "parallel." ('631 Patent at 7:6-11).

In one of the embodiments, the fin structures have been oriented "in parallel spaced apart relation" to one another. ('631 Patent at 4:30-31). The specification explains that, in this particular embodiment, "the cover plate is provided with an elongated inlet which is generally aligned with [the] gap." ('631 Patent at 4:32-33). That is, the parallel positioning of the fin structures in that embodiment is tied to the corresponding shape of the air flow inlet.

According to Plaintiff, while a parallel arrangement may be a sufficient structure, it is not necessary. Plaintiff argues there is no reason why another embodiment using a differently-shaped air inlet would not be allowed to use a differently-shaped gap. Plaintiff relies on the fact that the claim language only requires a "relative spaced relation" instead of a "parallel spaced relation" like the embodiment discussed at Col. 4, Lines 30-31. Again, Plaintiff assert the specification warns that the claims do not require any particular shape or design for the gap, including any shape or design described in the preferred embodiments. ('631 Patent at 7:6-11).

Defendants suggest that unless "relative" is defined to mean "parallel," it would be meaningless. The Court agrees. If construed as Plaintiff proposes, the term "relative spaced relation" would encompass any spatial positioning of the fin structures so long as a gap is formed therebetween. As urged by Defendants, such a construction is inappropriate because it encompasses

a seemingly infinite number of spatial orientations of the fin structures. Positioning the fin structures at any position other than parallel to each other would hinder the stated goal of the '631 Patent, namely to provide a split-feed, transverse air flow such that air flow is divided into two portions and passed through the fin structures.

The specification of the '631 Patent discloses, in all shown embodiments, that the fin structures are positioned in a parallel relationship. Each figure depicting the heat sink assembly in the '631 patent shows the fin structures positioned parallel to each other with an unoccupied space extending from the second surface. This "spaced relationship" is described in the specification as nothing but "parallel." ('631 Patent at 4:27-30 ("It will be seen further in FIG. 1 that first fin structure 16 and second fin structure 18 are affixed to the top plate12 on the surface opposite mounting surface 13 in parallel spaced apart relation")). The Court notes that the '631 patent describes the invention as a whole. Thus, this description of parallel spaced relation limits the scope of the invention. *See Tivo, Inc. v. Echostar Comm. Corp.*, 516 F.3d 1290, 1300 (Fed. Cir. 2008) (Noting the specification referred to the separation aspect of the "invention" and not merely one embodiment of a broader invention, the Federal Circuit held that "[w]hen a patent thus describes the features of the 'present invention' as a whole, this description limits the scope of the invention."). This construction is further supported by the fact that the cover plate of the '631 Patent, which encloses the fin structures, is specifically designed to fit with fin structures that are positioned in a parallel relationship.

The "cautionary language" in the '631 Patent that Plaintiff relies upon, which states that "various modifications" can be made and "alternative materials, shapes and dimensions may be utilized," does not compel the construction Plaintiff advances. Such boilerplate language is given no weight here. *Fromson v. Anitec Printing Plates*, 132 F.3d 1437, 1447 (Fed. Cir. 1997) (rejecting boilerplate statement that other "suitable liquids" could be used as insufficiently specific); *Honeywell*

Int'l, Inc. v. ITT Indus., 452 F.3d 1312, 1318-19 (Fed. Cir. 2006) (stating, in the context of patentee's statement during prosecution, that "such a broad and vague statement cannot contradict the clear statements in the specification describing the invention more narrowly"); *Aspex Eyewear, Inc. v. Altair Eyewear*, *Inc.*, 386 F. Supp. 2d 526, 535 (S.D. N.Y. 2005) (In the absence of any specific statement in the specification, "[g]eneralized disclaimers provide no guidance in defining which variations are within the scope of the claim language and which are not.").

Although the Court agrees the fin structures must be positioned apart in a paralleled relationship, the Court is not convinced, as urged by Defendants, that the unoccupied space extends from the second surface. Therefore, the Court construes "being in relative spaced relation" to mean "positioned apart from and parallel to each other such that an unoccupied space is formed between the fin structures."

2. "Air inlet path"

a. Parties' Positions

The parties propose the following constructions for "air inlet path" which is present in claim 2 of the '631 Patent. Plaintiff objects to Defendants' proposed definition to the extent it requires a specific shape of the air inlet path. Plaintiff further asserts the path does not actively direct the air flow as Defendants suggest. Finally, Plaintiff takes issue with Defendants' proposal that the air flow be strictly perpendicular.

Plaintiff	Defendants
An unoccupied space adjacent to an opening in the cover plate	An unoccupied slot directing air inflow from the opening in the cover plate perpendicularly to the second surface of the top plate

b. Court's Construction

In claim 2, the "air inlet path" is the space between the fin structures, formed by their relative position. ('631 Patent at 4:31-36). According to Plaintiff, there is no requirement to employ any particular shape or design of the air inlet path, including any shape or design described in the preferred embodiments. ('631 Patent at 7:6-11). Plaintiff further asserts claim 2 states that the "air inlet path" is the space formed by the relative positioning of the fin structures, i.e., akin to the "gap" in claim 3. ('631 Patent at 7:48-50).

The split feed transverse flow configuration requires that air enter the heat sink at an unoccupied slot before flowing through the fin structures. In addition, claim 2 expressly requires that the air inlet path be "adjacent" to the opening in the cover plate. ('631 Patent at 8:4-5). According to Defendants, Figure 1 of the '631 Patent, which the specification identifies as the "heat sink assembly of the present invention" (*id.* at 2:12-13; 4:40), shows that air flows through the opening in the cover plate and into the gap perpendicular to the second surface of the top plate. The Court agrees with Plaintiff that nothing in the claim language or specification requires the air flow to be strictly "perpendicular." Even if Figure1's schematic depiction of air flow is to be taken literally (i.e., perpendicular), Defendants do not satisfy their burden to justify importing this limitation into the plain, intelligible claim language. *Phillips*, 415 F.3d at 1323. In addition, Defendants have failed to convince the Court that the air flow path is the consequence of air being *directed* by the relative spacing of the fin structures, top plate, and the opening in the cover plate.

The Court construes "air inlet path" to mean "an unoccupied space receiving air flow from the opening in the cover plate to the second surface of the top plate."

3. "Separated from each other to form a gap therebetween, said gap extending from said second surface "

The parties agree this term, which is present in claim 3 of the '631 Patent, should be construed as "separated to form an unoccupied space extending from the second surface." That shall be its construction.

4. "Enclosure"

a. Parties' Positions

The parties propose the following constructions for "enclosure" which is present in claim 8 of the '631 Patent. The parties' main dispute is whether the construction should include the terms "housing," "fan/blower," and "mounted on an inner surface."

Plaintiff	Defendants
A structure which generally encloses at least the fin structures and the gap between the fin structures	A housing which encloses the heat sink assembly and a fan or blower, and to which the heat sink assembly is mounted on an inner surface

b. Court's Construction

Plaintiff asserts claim 8 of the '631 Patent provides that the fin structures must be in the enclosure, yet not totally enclosed, as there must be openings through which air flows in and out of the enclosure; the gap between fin structures must be adjacent to such an inlet. *See* Claim 8. Beyond that, Plaintiff asserts there is no requirement to employ any other particular shape or design of the enclosure, including any shape or design described in the preferred embodiments. ('631 Patent at 7:6-11).

Defendants' proposed construction is based on the description of the enclosure as implemented in the preferred embodiment. The preferred embodiment cannot, alone, serve to impart a restriction of claim scope. *Phillips*, 415 F.3d at 1323 ("[A]lthough the specification often describes

very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."). The Court will not import a limitation from the preferred embodiment into the claims. Simply put, there is no basis in the claim language for requiring the enclosure to be a "housing" nor is there any requirement that the heat sink assembly be "mounted" to the enclosure. Nor is there any requirement that the air source (e.g., a fan or blower) must be positioned within the enclosure. All of these are possible embodiments of the "enclosure," but no such embodiment is essential.

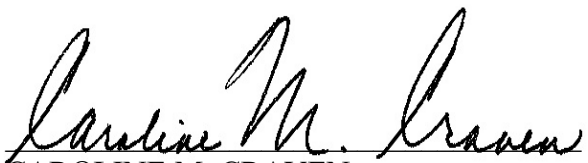
In light of the foregoing, the Court construes "enclosure" to mean "a structure which generally encloses at least the fin structures and the gap between said fin structures."

V. Conclusion

The Court hereby orders the claim terms addressed herein construed as indicated. A chart summarizing these constructions is attached as Exhibit A.

The parties are further ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual constructions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the constructions adopted by the Court.

SIGNED this 20th day of April, 2010.



CAROLINE M. CRAVEN
UNITED STATES MAGISTRATE JUDGE

EXHIBIT A

CLAIM LANGUAGE	DISPUTED CLAIM TERMS	PLAINTIFF'S PROPOSED CONSTRUCTION	DEFENDANTS' PROPOSED CONSTRUCTION	COURT'S CONSTRUCTION
2. A **heat sink assembly** of the type receiving an electrical component in in intimate engagement for dissipating heat generated by such component, such heat dissipation being promoted by forced air flow through the assembly; the assembly comprising: a **top plate** having a first surface for receiving said component and a second surface for receiving fin structures; a plurality of **fin structures** each **bonded** to said second surface of said top plate and extending therefrom; **at least two of said fin structures** being in **relative spaced relation** to form an **air inlet path** therebetween whereby an **air flow into said inlet between said two fin structures is divided, with a respective portion of**	"heat sink assembly" Claims 2 and 3	Heat sink device	Two or more parts put together	No construction necessary
	"top plate" Claim 2	A generally planar member to which fin structures may be either integrally or non-integrally connected	A flat member that is separate from the fin structures	A flat member that is separate from the fin structures
	"fin structure" Claims 2 and 3	An arranged grouping of fins	A structure formed from sheet material and defining plural, vertically stacked air passages extending parallel to the second surface	An arrangement of fins and air passages
	"bonded to said second surface" Claim 2	Thermally connected to the second surface	Affixed to the second surface using a thermally-conductive bondant.	Affixed to the second surface using a thermally-conductive bondant
	"at least two of said fin structures" Claim 2	At least two separate fin structures	At least two separate fin structures	At least two separate fin structures

CLAIM LANGUAGE	DISPUTED CLAIM TERMS	PLAINTIFF'S PROPOSED CONSTRUCTION	DEFENDANTS' PROPOSED CONSTRUCTION	COURT'S CONSTRUCTION
said air flow being directed through each of said two fin structures; and a **cover plate partially enclosing** said fin structures and having an opening adjacent said air inlet; wherein said top plate is of a rectangular shape and each of said fin structures is of an elongated rectangular shape.	"being in relative spaced relation" Claim 2	Separated from each other	Positioned apart from and parallel to each other, such that an unoccupied space extending from the second surface is formed between the fin structures	Positioned apart from and parallel to each other such that an unoccupied space is formed between the fin structures
	"air inlet path" Claim 2	An unoccupied space adjacent to an opening in the cover plate	An unoccupied slot directing air inflow from the opening in the cover plate perpendicularly to the second surface of the top plate	An unoccupied space receiving air inflow from the opening in the cover plate to the second surface of the top plate
	"whereby an air flow into said inlet between said two fin structures is divided, with a respective portion of said air flow being directed through each of said two fin structures" Claim 2	Whereby an air flow into said inlet is divided, such that respective portions of the air flow are directed through separate fin structures	Where the inlet receives forced air directed at and flowing perpendicular to the second surface, where the forced air is split and all the air flows through the passages of the fin structures, along paths parallel to the second surface	Whereby an air flow into said inlet is divided, such that respective portions of the air flow are directed through separate fin structures
	"cover plate partially enclosing said fin structures" Claim 2	A generally planar member positioned generally below the fin structures (relative to the top plate) which partially encloses the fin structures	A flat member positioned on top of the fin structures having opposed side walls and a slot for directing forced air flow only into the air inlet path between said fin structures	A flat member positioned to partially enclose the fin structures

CLAIM LANGUAGE	DISPUTED CLAIM TERMS	PLAINTIFF'S PROPOSED CONSTRUCTION	DEFENDANTS' PROPOSED CONSTRUCTION	COURT'S CONSTRUCTION
3. A forced air **heat sink assembly** comprising a **thermally conductive planar member** having a first surface for receiving a component to be cooled thereby and having a second surface; and **at least two fin structures** in **intimate contact with** said second surface and **separated from each other to form a gap therebetween, said gap extending from said second surface** and **configured for receiving air flowing toward said second surface, dividing said air into two portions and directing each such portion through a**	"thermally conductive planar member" Claim 3	A generally planar member to which fin structures may be either integrally or non-integrally connected	A flat, thermally conductive member that is separate from the fin structures	A flat, thermally conductive member that is separate from the fin structures
	"at least two fin structures" Claim 3	Two or more fin structures	At least two distinct and separate fin structures	At least two distinct and separate fin structures
	"in intimate contact with said second surface" Claim 3	"Thermally connected to the second surface"	In contact with, but distinct from, the second surface.	In intimate contact with, but distinct from the second surface
	"separated from each other to form a gap therebetween, said gap extending from said second surface" Claim 3	Separated to form an unoccupied space extending from the second surface	Separated to form an unoccupied space extending from the second surface	Separated to form an unoccupied space extending from the second surface
separate fin structure for removing heat therefrom.	"a gap . . . configured for receiving air flowing toward said second surface, dividing said air into two portions and directing each such portion through a separate fin structure"	A gap designed to receive air flowing to the second surface, to split the air flow, and to direct portions thereof through separate fin structures	A gap designed to be the air intake and arranged to receive forced air directed at and flowing perpendicular to the second surface, to split the forced air, and to direct all of the forced air through the passages of the fin structures, along paths parallel to the second surface.	No construction necessary

CLAIM LANGUAGE	DISPUTED CLAIM TERMS	PLAINTIFF'S PROPOSED CONSTRUCTION	DEFENDANTS' PROPOSED CONSTRUCTION	COURT'S CONSTRUCTION
8. The assembly recited in claim 3 further comprising an **enclosure** having an inlet and an outlet, said gap between said fin structures being positioned adjacent said enclosure inlet.	"enclosure" Claim 8	A structure which generally encloses at least the fin structures and the gap between said fin structures	A housing which encloses the heat sink assembly and a fan or blower, and to which the heat sink assembly is mounted on an inner surface	A structure which generally encloses at least the fin structures and the gap between said fin structures